



THE ZOO GOER

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Contents

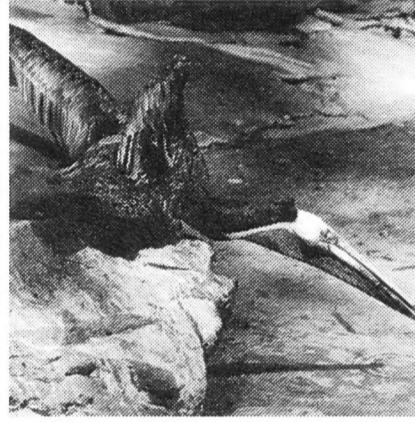
3 Trails, Tracks, & Totems

11 ZooNews

15 Animal Architects

21 BookNews

22 FONZNews



Front Cover: Its bill holds more than its belly which helps make brown pelicans a novel, new exhibit at the Zoo.

Back Cover: A new Zoo trail and track system provides a colorful, step-by-step guide to animals and visitor services.

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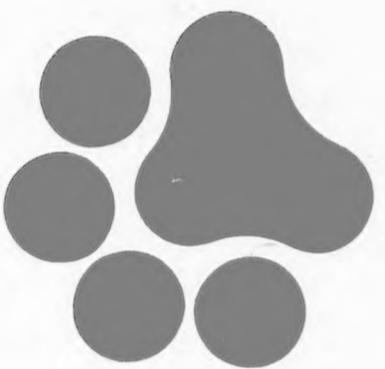
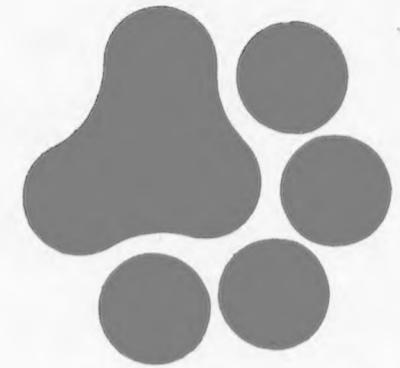
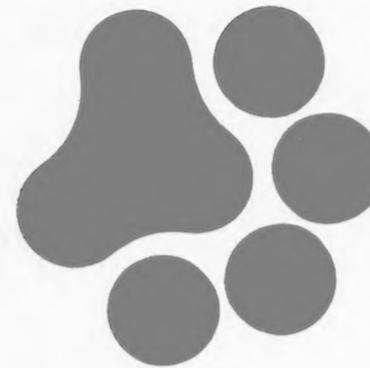
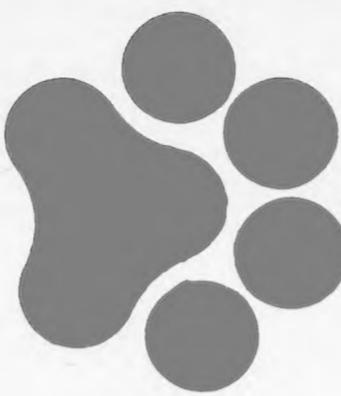
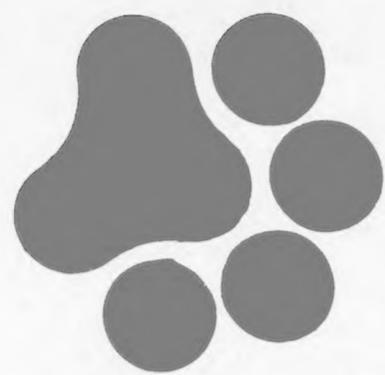
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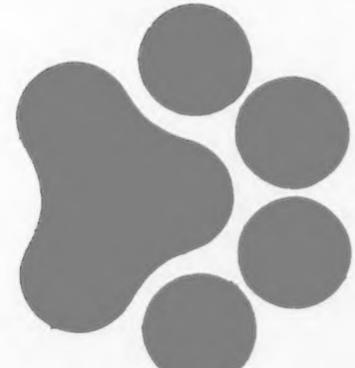
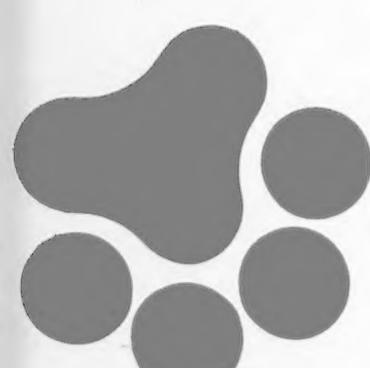
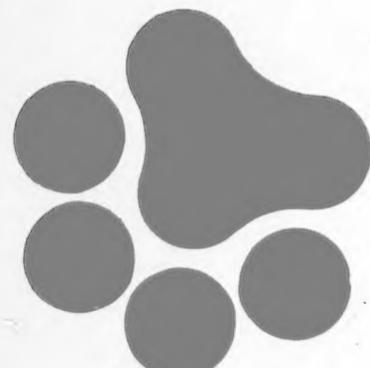
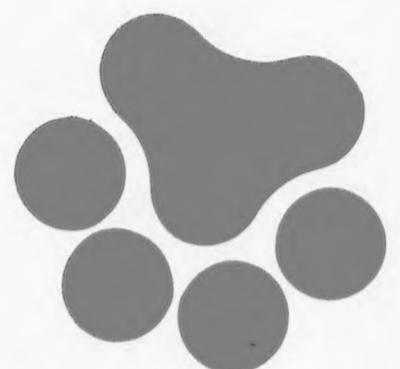
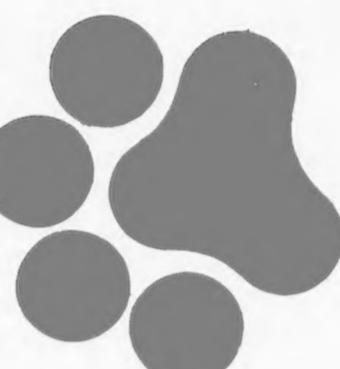
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Trails



Tracks



Totems

Trails, Tracks, Totems

by Anne M. Byers, Staff Writer
The Nature Conservancy

Which way to the pandas? Where is the Elephant House? Is there a restroom nearby? How many exhibits can we see in two hours? What's over the hill?

Such questions are common at the National Zoo. After all, in a 167-acre hilly park, it can be a long way between restrooms. Now, thanks to a new trail and graphics system, such questions will be answered—quickly, easily, and entertainingly. Called the Olmsted Walk and Trail System, the project is part of the architectural face-lifting of the Zoo that was begun three years ago.

The New York-based firm of Lance Wyman and Bill Cannan, and Robert E. Mulcahy, the Zoo's Head of Graphics and Exhibits, designed the new system to define the Zoo's geophysical layout and enhance its park-like quality. To best reach all the exhibits, including ones that cannot

Sixteen-foot totem poles decorated with color-coded symbols, or pictographs, point the way to the Lion, Zebra, Elephant, Duck, Polar Bear, and Crowned Crane Trails.



be moved, the scheme uses some existing paths and creates new ones. As Mulcahy explains, "The Trail System establishes Olmsted Walk, the street which runs from the Zoo entrance at Connecticut Avenue down to the Harvard Street entrance at Rock Creek, as the main promenade. The animal exhibits are located on six off-shoot trails that begin on and loop back to Olmsted Walk. Some sidewalks and paths have been replaced by grass. The new trails are asphalt."

Once the trails were laid out, a unique means of identifying them was created. Sixteen-foot totem poles stand at either end of each trail. The totem poles contain individual panels identifying animals exhibited on the trail. The large center panel on each totem shows the "theme" animal, such as a zebra, for which the trail is named. Other panels feature a color-coded map, directions to service facilities such as restrooms, telephones, and food services, the length of the trail and approximate walking time, and the animal footprint one follows to remain on the path.

"Animal tracks on the path further blaze the trail. If you're on the Zebra trail," explains Mulcahy, "you follow the zebra tracks. They will take you in and



Festive, flapping banners further identify major animal exhibits throughout the Zoo.

out of buildings, around and through exhibits. Tracks are not always continuous, but sometimes clustered, so that as you reach a hilltop or round a corner, you will catch sight of another set of tracks, which will keep you on

the right trail. Also, the tracks have a 'sense of humor' that we think is necessary. We tested the duck tracks first to see how people would react to them. The kids hopped along on the footprints. They went crazy."



To further reinforce the system, all trails, totems, and tracks are not only animal-coded, but color-coded. The panels on the Lion Trail totem and the lion tracks, for example, are orange. Amenities along the trails, such as benches, food kiosks, and drinking fountains, are also consistent in design and color. Even the trash bins carry symbols locating nearby restrooms, phones, food, and train services.

Olmsted Walk also has large identifying totem poles at either end (Connecticut Avenue and Harvard Street) and at the Elephant House. The large center panels of these three totems show the major symbol of the National Zoo—a mother bald eagle and chick. Smaller panels describe each of the six trails, their exhibits and services, and include a "trail blazer" panel. This shows the 30-inch-wide red stripe that runs down Olmsted Walk, the Zoo's main artery.

By following the red stripe that passes the totems for all six trails—the Crowned Crane Trail, the Zebra Trail, Elephant Trail, Polar Bear Trail, Lion Trail, and the

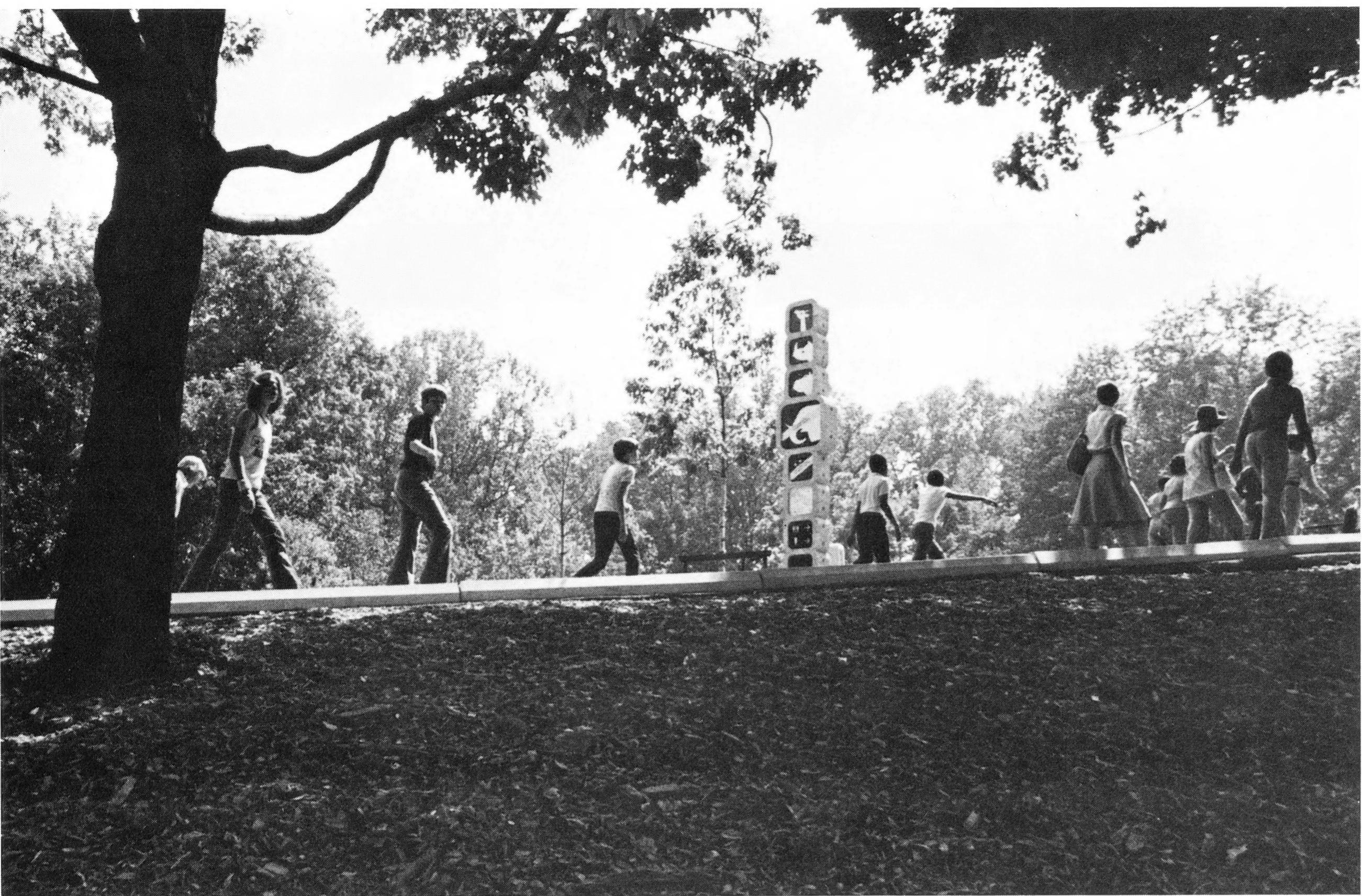
It's fun to follow animal tracks, as these young visitors discover while they walk along the Crowned Crane Trail. If they were on the Zebra Trail, they would follow zebra tracks.

Duck Trail—visitors can see as much or as little as they wish.

Besides guiding zoogoers, the new totem poles are designed to be easily altered if exhibits change. The poles can be put together or taken apart easily, and inset panels are removable and fit into other totems when animals are moved from trail to trail. The totems are weatherproof, since the sections are concrete and the panels are enameled-plated steel.

Describing the new trail markers, Bob Mulcahy said, "The great thing about the new master graphics plan is that as we find something that doesn't work or doesn't communicate to the public, we can change or improve it. No system is perfect; as the Zoo changes and grows, the new system will change and grow."

The master graphics plan, designed in unison with the park's architectural plan, also reflects the National Zoo's grand endeavor to save and propagate endangered species. Most of the graphics highlight threatened animals. For example, the Zoo's major symbol, a mother eagle feeding her chick, represents not only the park as the *National Zoo*, but also its hope to perpetuate endangered species.



The tall totems, such as this one at the Elephant House, have been designed to be eye-catching even at a distance so that visitors won't get lost.

Mulcahy explained how the new symbols for the Zoo animals evolved: "The symbols themselves are truly pictographs, which are very literally interpretations of the animals. Simply by watching the way animals carry their heads—just the way they place them—you can see a dis-

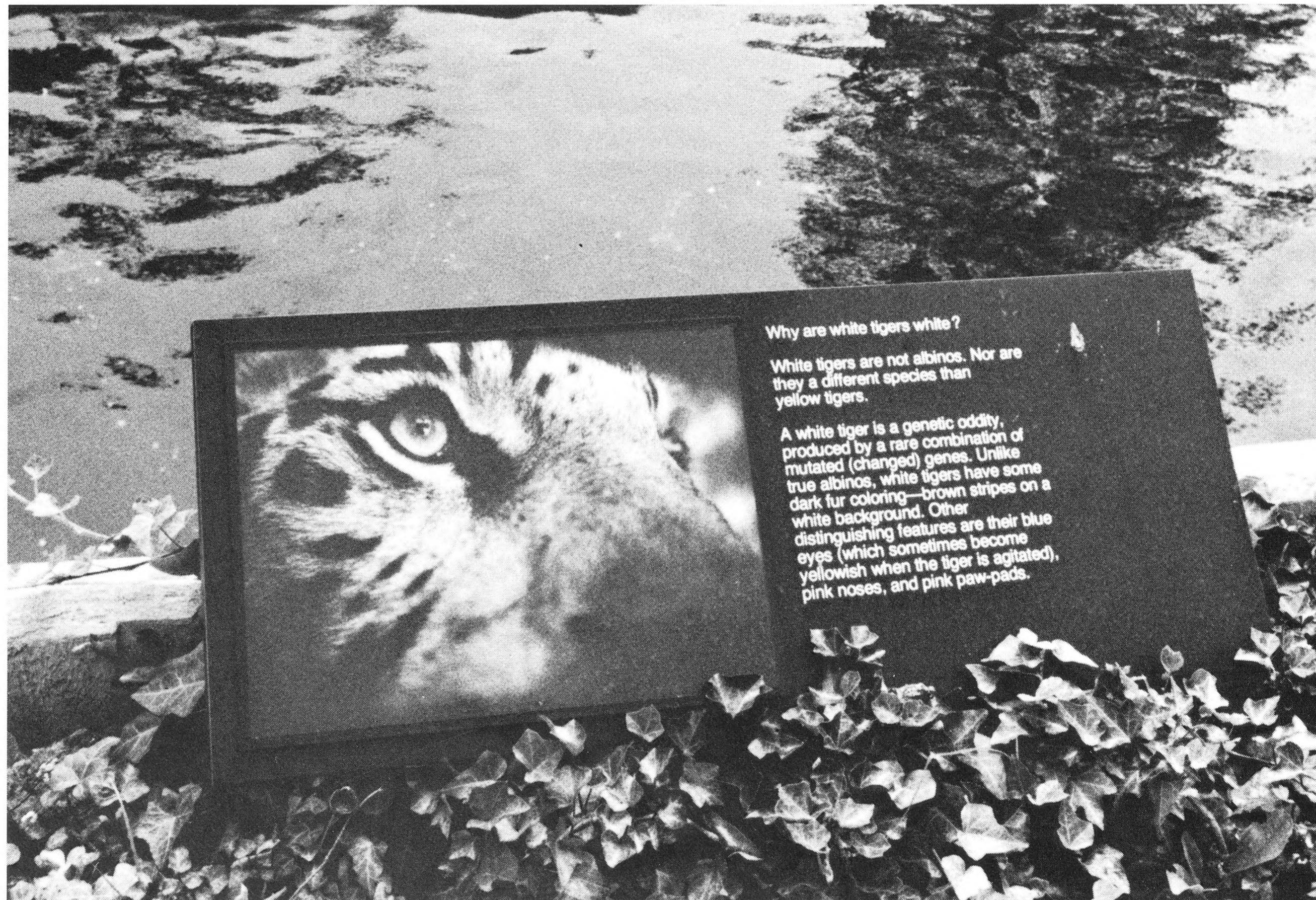
tinct difference in each one. Whatever symbols we chose to use had to depict not only the actual shape of the animal's head, but also its general demeanor. Since symbols are abstractions of reality, not real-life images, we decided that pictographs would be the best specific

identifiers for the animals. They were also most acceptable to the scientific community at the Zoo. The pictographs are very concise; some of them tend to be slightly humorous, but that's probably because the animal is."

"Best of all, the new trail system

turns the Zoo into a totally integrated system, which communicates with all your senses. You can find a specific exhibit or service more easily, or tell someone that you'll meet them at a particular place in the park."

To complement the new trail-and-track system, informative panels at animal exhibits answer such often-asked questions as "Why are white tigers white?"



According to Mulcahy, the trails, totem poles, and animal tracks should be installed by July. To orient you to the Olmsted Walk and Trail System before your next visit to the National Zoo, the trails—their colors, lengths, and

some major exhibits—are listed below, in the order in which they are laid out from Connecticut Avenue to Harvard Street:

Crowned Crane Trail (forest green)
—8/10 mile, 45-minute walk: Bird

House and Great Flight Cage; parrots, Australian emus, flamingos, pelicans, eagles, owls, ostriches, crowned cranes.

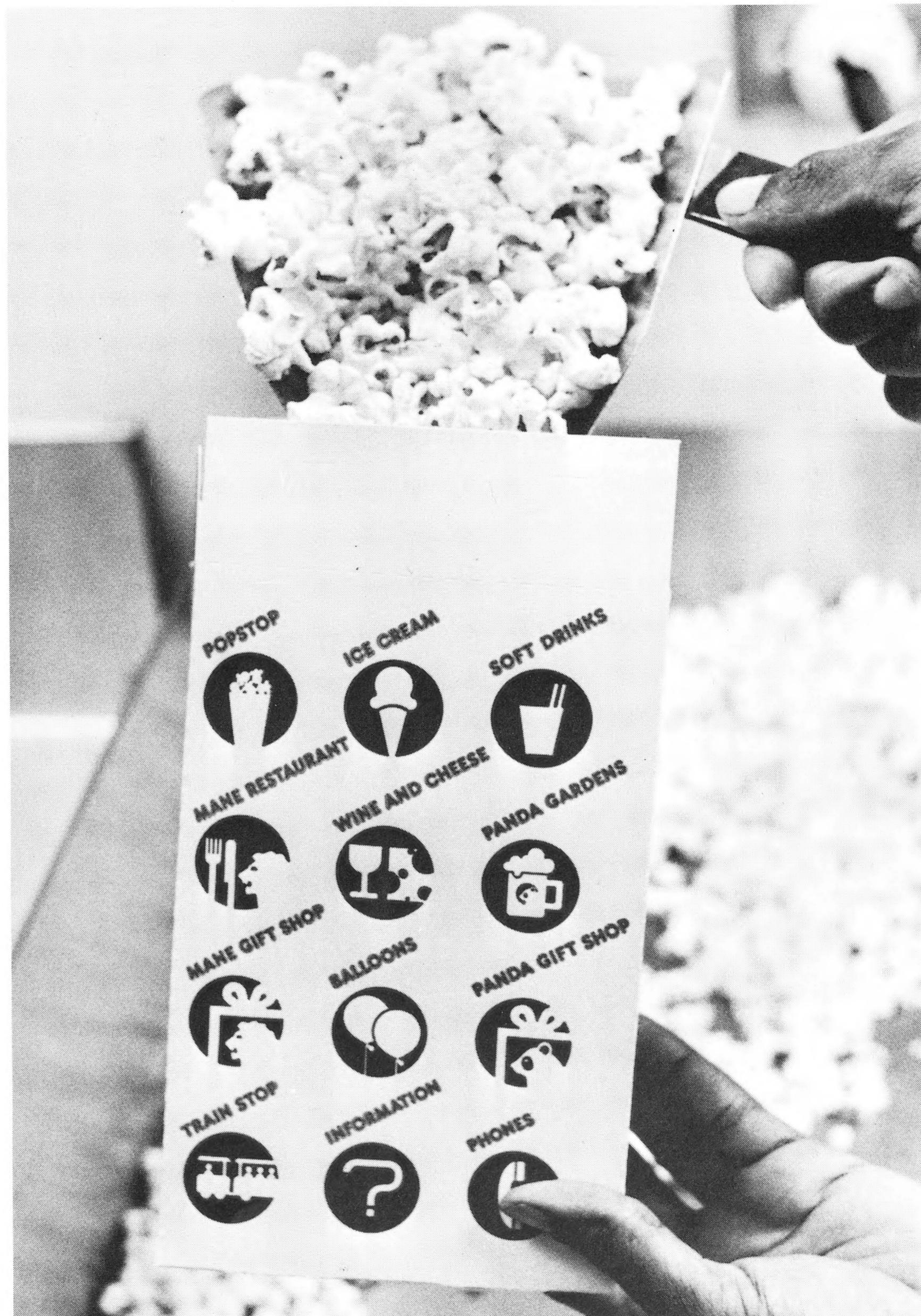
Zebra Trail (grey)—1/2 mile, 25 minutes: Hoofed animals like scimitar-horned oryx, dorcas gazelles, yellow-backed duikers, wildebeests, dik-diks, sable antelopes, bongos, blesboks, zebras; red kangaroos, and pandas.

Elephant Trail (brown)—1/4 mile, 15-minute walk: Elephant House and yards featuring Masai giraffes, Indian rhinos, black rhinos, pigmy hippos, elephants, Nile hippos.

Polar Bear Trail (royal blue)—(Due to open Spring 1978), 4/10 mile, 20 minutes: Polar Bear Valley with otters, beavers, wolves, sea lions, plus kodiak bears, sun bears, grizzlies, brown and black bears, Arctic bears, Smokey Bear, cheetahs, and jaguars.

Lion Trail (orange)—3/5 mile, 45-minute walk: Small Mammal House, Reptile House, Monkey House, Mann Memorial Lion and Tiger Exhibit, featuring white

Specially-designed popcorn boxes tell snackers about the many different visitor services, which are identified, like the animals, by pictographic symbols.



tigers, Atlas lions, great apes, gibbons, meerkats, Colobus monkeys, crocodiles, pythons, red pandas.

Duck Trail (yellow)—1/4 mile, 15 minutes: whistling swans, black swans, Canadian geese, mallards, wood ducks. (Will become part of Polar Bear Trail next year.)

. . . Happy tracks through the Zoo.

Large trail maps tell zoogoers what animals are on what trail as well as giving the length and estimated walking time for each trail.

FOLLOW THE  TRACKS TO SEE

THE  LION,



CROCODILE,



SNAKE,



MONKEY,



GORILLA,



LYNX,



TIGER

AND MANY OTHER RELATED SPECIES

DISTANCE: 3/5 OF A MILE OR 1 KM.

TIME ESTIMATE: 45 MINUTES



Zoo Hippo Has Fifteenth Baby

Born in May and weighing a hefty 75 pounds, this female Nile hippo baby is the fifteenth offspring of her 5,000-pound mother, "Arusha," and father, "Joe Smith." An increasingly rare sight in the wild, hippos thrive—and breed well—at the National Zoo.



Zoo Adds Cormorants, Pelicans to Collection

by Sally Tongren
FONZ House Guide

The Great Flight Cage has four new residents; three double-crested cormorants and a Brandt's cormorant.

Cormorants are familiar to sailors as the black birds which sit on pilings and "hang out their sails to dry." They often sit with

outstretched wings when they are out of the water. It isn't certain whether this is because their flight feathers lack waterproofing or because they are located so far back on the body that they are nearly upright when they are out of water. In the water, however, this allows them to dive fast and deep to catch fish.

The double-crested cormorant is common on both the Atlantic coast from Newfoundland to Florida and Pacific Coast from Alaska to California. It is also

found on inland lakes. During breeding time, the throat skin is bright orange, and two curly tufts of feathers appear in its head. The Brandt's cormorant is more common on the Pacific coast.

An interesting habit of cormorants which can be seen on warm days is gular fluttering which is a cooling technique rather like panting. If you see a bird sitting with open beak and with the chin area or gular pouch vibrating gently, this is what is going on. Birds have no sweat glands and

A feathered swimmer and diver with few rivals, the fish-catching Brandt's cormorant is now on exhibit in the Great Flight Cage.



have to use other methods to cool off.

Five brown pelicans, close relatives of the cormorants, have moved into the pond between the Panda House and the Bird House. The brown pelican ranges from the Gulf coast and West Indies to Venezuela and from central California to Chile. It is the state bird of Louisiana. In recent years, it has almost vanished from North America because of pesticide pollution. It vanished completely from Louisiana until some were imported from other parts of the range. Since the pesticide ban has been in effect, the brown pelican appears to be enjoying a comeback.

Brown pelicans often catch their fish by diving into the water with a tremendous splash and seizing fish from the surface. The pouch can hold much more than the bird can swallow, but is used as a dip net. Water is thus strained out before the fish are swallowed. Pelicans have an elaborate system of air sacs under the skin and within the bones making them very buoyant and helping cushion the impact when they dive. They do not mature until their third year and do not have full adult plumage until that time.

Brown pelicans, the state bird of Louisiana, have moved into the pond between the Panda and Bird Houses. The big-billed birds are expert fishermen like their close relatives, the cormorants.



Zoo Visitor Profiled: A Very Special Person

by J. Fisher

Personnel have always known it, but now it's official. The people who love and visit the National Zoo are unusual, and a special report tells why.

The report summarizes on-site interviews with zoo-goers made by Westat, Inc. The study was done to help the Zoo better serve the future needs of the general public, especially in the context of the vast Master Plan, which already has brought dramatic changes to the park.

According to the report, the Zoo's public appears to be far from ordinary. On the contrary, it is well educated, knowledgeable about animals, and has an above average income. Almost 40% of the adults interviewed hold a bachelor's or other advanced degree.

Family incomes for more than half were well above the \$15,000-a-year level. Over 15% made \$25,000 or more. Most visitors come in family groups and drive their own cars.

They obviously get around quite a bit, because they frequently go

to other local attractions such as the Smithsonian museums, art galleries, monuments, plays, concerts, and sports events.

All the Zoo's facilities, from exhibits and descriptive signs to restaurants and FONZ shops, got high marks from respondents. Almost everyone strongly backed natural-habitat-type exhibits and expressed a desire to see the animals on a "close-up basis."

Pandas and lesser pandas, large mammals, big cats, bears, and monkeys led the Zoo's hit parade. But zoogoers also enjoyed the reptiles, birds, and antelopes.

There were differences between metro dwellers and those outside the area. Local residents seem to get more pleasure than out-of-town visitors out of just dropping by the Zoo rather than tailoring a trip to see specific animals. They also stay a shorter length of time—one to three hours—and make a visit their sole outing of the day.

Hometowners also use the Zoo more frequently. Says the report: "Metro resident visitors account for a high proportion of all visitors who come to the Park two or more times in a 12-month period. The tendency for approxi-

mately two-thirds of all visitors to come to the NZP once in a 12-month period was consistent across all four seasonal survey periods in the study."

Young zoogoers 5 to 12 years old had their say, too. Their favorite animals pretty much dovetailed with grown-ups' choices, but they added seals to their honor list.

The youngsters would make good naturalists, but poor geographers. They were interested in the animals' natural habitats and physical characteristics, but did not express much curiosity about their places of origin. For instance, the range map associated with the spider monkey drew little enthusiasm. The budding zoo enthusiasts were, however, anxious to learn about new animals and endangered species.

A question about the merits of bongos versus zebras evoked this response from one young connoisseur: "The zebra is fine after you see him once. But he doesn't do anything. I've never seen a bongo, maybe he does more."



Animal Architects

Animal Architects

by Austin Hughes

Man has altered the face of this planet more than any other living creature. By cultivating plants and animals, we have created our own ecosystems. By burning fuels, we have altered

the chemistry of the atmosphere and the oceans. Perhaps most conspicuous of all, we have built much more than any other species. Of the millions of different species that have lived on our planet, none has built structures so extensive or so permanent as man.

Perhaps because of our near monopoly on construction, man

tends to overlook the building activities of other animals. Yet many others—from birds to beavers—build impressive structures.

The most impressive animal architects are the insects. Termites, bees, and wasps—like man—

Previous Page: Busiest of all builders, beavers join forces in a remote Arizona lake to construct a split-level home or lodge.

Sun bitterns in the Bird House prove to be engineers as well as architects with their stick nest cantilevered on a pole.



have highly evolved societies that encourage the division and organization of labor that large-scale construction demands. In many tropical countries, termites erect ten-foot-tall "skyscrapers" made of a cement mixed from glandular secretions, their own feces, and soil. Some mounds are nearly as hard as concrete and may be in use over 100 years.

The most highly evolved reptilian nest-builders are alligators. Both American and Chinese alligators build nest mounds of dead plant matter and mud. The mother tends the nest and may add or subtract layers to modify the temperature of the incubating eggs.

The earliest birds probably nested on the ground and built simple nests. Today, some ground-nesting birds like pheasants make only a shallow scrape in the earth for their eggs. A few ground-nesting birds like the Zoo's South East Asian partridge or roulroul build roofed-over nests. The red and green female roulroul builds her nest and sits on her eggs at the same time. She picks up twigs and other forest-floor lit-

To attract a mate, the male bowerbird from New Guinea and Australia builds a courtship bower in the Bird House. Some bowerbirds build towers nine feet high with slanted roofs and internal chambers.



ter with her bill and throws them onto her back. Thus, she gradually builds up a roof over her nest, using her own back as a support. When the roof is finished, its contour closely matches the contour of the bird's back.

Most songbirds build shallow cup-shaped nests in trees. The northern oriole or Baltimore oriole, however, designs a pouch-like nest that dangles below the branch. Hanging nests are partic-

Prairie dogs, like those on exhibit at the Zoo, are famous for building "towns," or underground cities with miles and miles of tunnels and dens. Some towns have populations in the millions!



ularly common in the tropics. The lesser green broadbill, a tropical Asian species on exhibit in the Bird House, builds a foot-long hanging nest with a small chamber at the bottom for the mother bird and her eggs. As an added protection, the broadbill builds its nest from a branch that extends out over a stream.

Wading birds, such as ibises and herons, often build huge nests. Sacred ibises and boat-billed

herons, which nest in the Bird House, build yard-wide platforms of sticks.

Sometimes, when a nest is re-used year after year by several generations of birds, it can grow to immense proportions. Bald eagle nests, for instance, may extend ten feet in diameter and weigh hundreds of pounds.

Swiftlets in Asia weave cup-shaped nests made entirely of their own saliva. The saliva is secreted in long strands and dries like glue after contact with the air. The nests are collected by the local people and dissolved in boiling water to form the base for "birds' nest soup."

Few mammals compete with birds as builders. Many rodents build small nests on the ground for their young. In addition, a few rodent species have the distinction of being the only vertebrates apart from man that build permanent year-round houses. Beavers and woodrats are examples of rodents that build sturdy houses lasting decades. One woodrat house in Utah was occupied continuously for an estimated 10,000 years!

Beavers are one of only a few mammals that construct permanent, year-round homes, like this lodge in Maine fronted by a protective dam, also beaver-built.

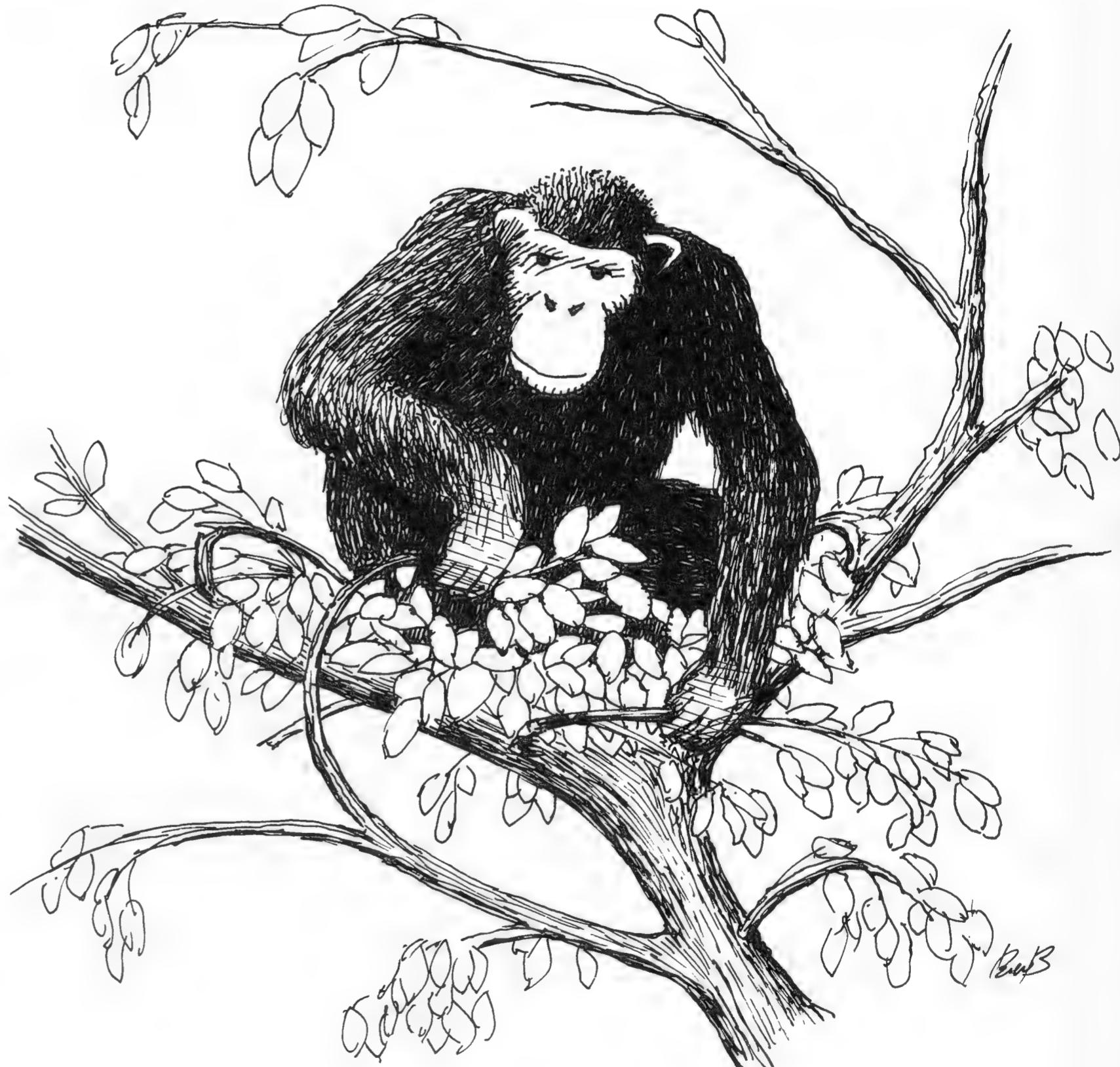


Man's primate relatives share surprisingly little of our architectural abilities. Monkeys do no building at all. However, gorillas and chimpanzees do build temporary shelters or "nests" at night. Before going to sleep, a gorilla breaks and bends nearby branches and vines, placing them around its body to form a roughly circular nest. A gorilla never sleeps in the same nest two nights in succession.

The basic movements involved in chimpanzee nest building are known to be instinctive. However, a chimpanzee removed from his parents as an infant and raised in captivity will not be a very good nest builder. So, the chimpanzee's nest building is also partly learned. The ape improves his techniques by observing and copying from the parents.

Most animal builders, on the other hand, are guided by instinct alone. In fact, a bird usually has never seen a nest being constructed before it builds its own. Thus, animal instinct does the same thing human culture does but in a radically different way. The information is stored not in memory or in writing, as in human culture, but in the animal's own genes—that is, in the biochemical make-up of every cell in its body.

Chimpanzees, like gorillas, build temporary shelters or "nests" in trees for sleeping at night.



BOOK NEWS

Wild World of Animals Time-Life Series

Dangerous Sea Creatures

Elephants and Other Land
Giants

The Cats

Monkeys and Apes

Reptiles and Amphibians

by Pamela Matlack Stoil

FONZ Guide

In looking through the Time-Life series, prepare to see things you've seen before. The photographs, which are the best part of the series, are spectacular, but they are largely the same illustrations that have appeared in other Time-Life series and on numerous television specials. If the reader has missed all of the other Time-Life books or is fascinated by one species covered extensively in the series—African elephants, for example—then one or two volumes of *Wild, Wild World of Animals* may be of interest. Otherwise, the series cannot be recommended.

There are two problems with the texts of this series. First, there is too little information on animal behavior and anatomy, and it is

arranged in too haphazard a fashion to satisfy the serious student. The editors apparently chose text to describe the photographs they wished to use instead of selecting photographs to illustrate the text. *Reptiles and Amphibians* devotes nearly half its length to snakes, which photograph well, but only two pages to the fascinating crocodilians, which tend to resemble floating logs in still photography.

The second problem with the text is its negativism. In addition to photographs and factual information, the series includes short fiction and excerpts from novels that dramatize man in conflict with animals. Nearly all of these fictional selections emphasize violent death, either of animals, as in George Orwell's description of shooting an elephant in *Elephants and Other Land Giants*, or of humans, as in an excerpt from *The Murders in the Rue Morgue* in *Monkeys and Apes*. Nearly a fourth of the section on sharks in *Dangerous Sea Creatures* consists of a gory excerpt from *Jaws* and a misleading description of a whale shark by Thor Heyerdahl, which give the reader the impression that this docile plankton-eater is really a deadly threat to man. The rest of the text on sharks captures the spirit of the

fictional accounts with the sub-heads "The Jaws of Death" and "The Great White's Killer Cousins" while capitalizing on the shark's overrated reputation as a man-eater.

The morbid nature of the text and the fictional selections make the series unsuitable for children. An impressionable child reading *Dangerous Sea Creatures* could be convinced that everything in the sea is deadly. At best, a child will find the constant emphasis on violent death depressing and decide that all animals are dangerous. The combination of fictional excerpts with factual text could have been managed with an eye toward educating young readers or, at least, entertaining them. The selections from Rudyard Kipling included in two of the five volumes fulfill this latter purpose with charm. Instead, however, the editors of *Wild, Wild World of Animals* opted for sensationalism and have ended by producing a text that is neither informative nor geared to produce a healthy interest in further reading on the subject.

FONZ NEWS

FONZ Tours Planned for Asia, Africa, Russia, Antarctica

Ride elephants in search of tigers and see the Taj Mahal by moonlight; explore Russia and Eastern Europe on specially planned wildlife excursions; stalk gorillas with pygmies in the Congo jungle; and cruise to Antarctica for a close-up look at penguins. Such one-of-a-kind adventures await FONZ members who join four special wildlife safaris planned for 1978-79.

A 28-day "Shikar" (Hindu for safari) in mid-March 1978 is designed to cover the greatest wildlife sights in India, Nepal, and Sri Lanka (formerly Ceylon). Spring is ideal for weather and wildlife in India. Special visits are planned to Corbett National Park, Ghana Bird Sanctuary, Assam, Delhi, and Jaipur to see Indian rhino, Gir lion and white tigers, to name just a few. Game viewing will be done by elephant back, and of course, time will be spent in Agra to see the Taj Mahal by the light of moon and sun. The tour continues to the "roof-top of the world"

—Nepal—to visit its colorful capital, Katmandu, and spend the night at Tigertops Jungle Lodge where tiger viewing is done by elephant back or Land Rover. Finally, several days will be spent in beautiful Sri Lanka to visit their excellent wildlife parks as well as the ancient cities of Kandy and Anuradhapura. The all-inclusive estimated price for the 28-day tour is \$2,500-\$2,600, which includes a \$100 tax-deductible gift to FONZ.

A mid-June 1978 "behind-the-Iron Curtain" adventure will provide a 22-day look at the wildlife and cultural highlights of Germany (West and East), Poland, Russia, Czechoslovakia, and Hungary. There will be VIP tours and receptions at wildlife parks in Cologne, Berlin, Warsaw, Moscow, Prague, and Vienna plus comprehensive city tours. The group will attend the renowned Moscow Circus, the Leningrad Folklore performance, and Laterna Magica show in Prague. Travel from Leningrad to Moscow will be on the overnight "Red Arrow Express" train in "soft class" sleeper. A hydrofoil boat will be used to cruise up the "blue" Danube from Budapest to Vienna. The trip ends with a "farewell Europe" banquet in Grinzing, a picturesque suburb of Vienna. The 22-day, all-

inclusive trip cost will be \$2,100-\$2,200, which includes a tax-deductible \$100 gift to FONZ.

A 26-day "ultimate Safari" to Kenya and Zaire in September 1978 is designed for those seeking the most unusual and exciting of African wildlife adventures. The itinerary and activities were judged "the greatest" by East Africa's foremost safari leaders. In addition to walking and canoe excursions, there will be a charter flight to remote Lake Rudolph and a day-long gorilla stalk using pygmy guides through the jungles of Zaire (formerly Belgian Congo). Private tent camps will be used on the game-rich Serengeti Plains and at the foot of snow-capped Kilimanjaro. All-inclusive cost for the Ultimate Safari will run \$4,000-\$4,200, which includes a \$100 tax-deductible contribution to FONZ.

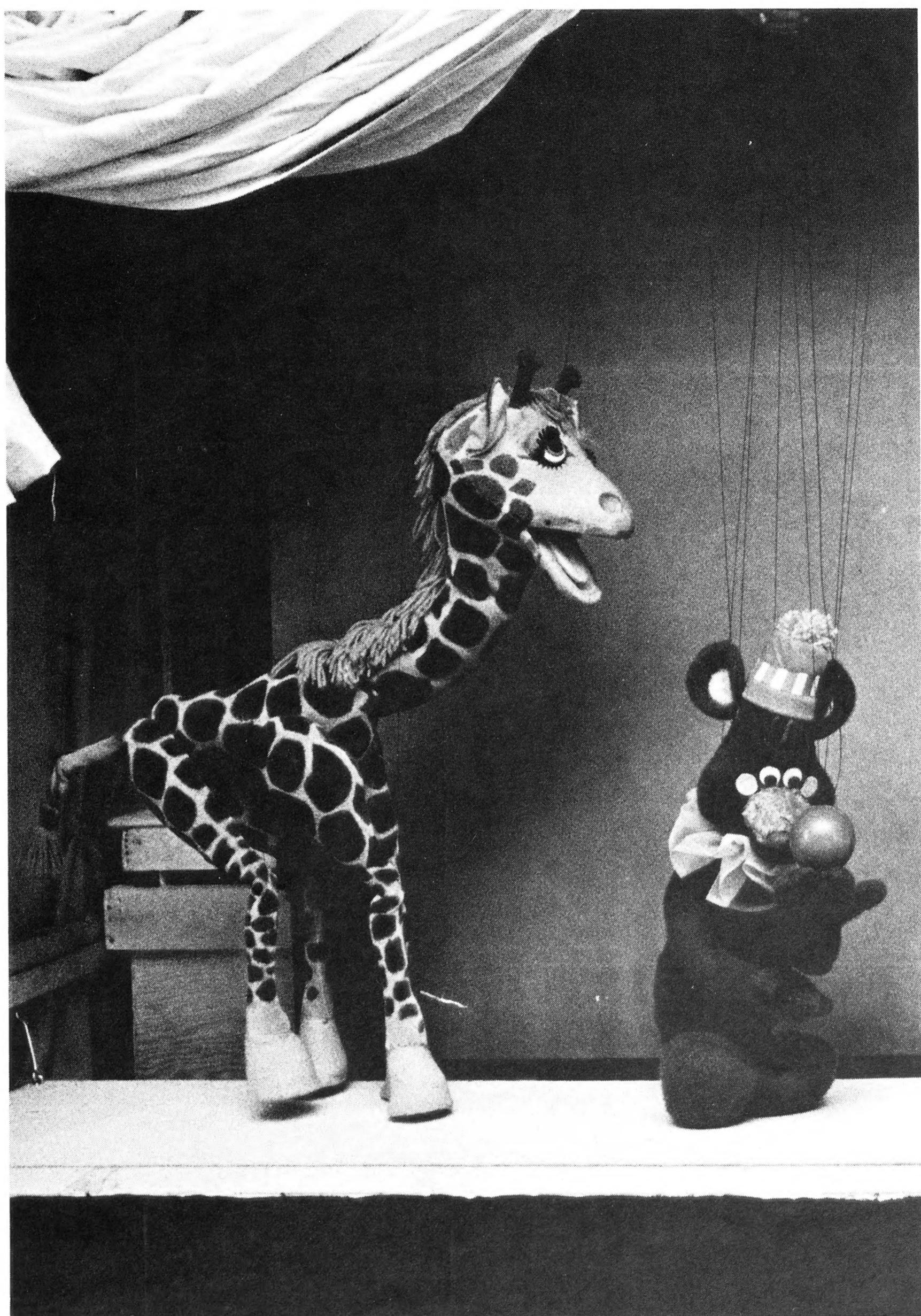
Last and most in terms of time, expense, and uniqueness is a 44-day expedition/cruise in January 1979 to the White Continent—Antarctica. Access to this remarkable polar region will be by the famed M/S Lindblad Explorer, a combination ice breaker and comfortable cruise ship.

Professional naturalists will lead frequent shore excursions to ex-

plore the unique flora and fauna on such remote islands as Balleny, MacQuarie, and Campbell, where penguins and other birds are a common sight. Several days will be spent in Buenos Aires, Argentina, on the way down and in Auckland, New Zealand, on the return. "Only a trip to the Moon can match this adventure," claims one world traveller. The all-inclusive tour price of \$9,000-\$11,000 (depending on ship accommodation) includes a \$100 tax-deductible contribution to FONZ.

All FONZ tours are led by a professional zoologist or a FONZ executive. Each tour is limited to 20 individuals, so to avoid disappointment, interested members should contact the Office of the FONZ Executive Director as soon as possible.

A "mooing" giraffe and a juggling bear are among a dozen colorful characters in a new—and free—puppet show staged hourly from 10:30 a.m. to 3:30 p.m. every day thru August 12 at the Zoo's Information Center across from Lion-Tiger Hill. The half hour "Zoodle Doodle Show," produced by FONZ and created by the Bob Brown Marionettes, is put on by some 60 FONZ junior members as part of the summer zoo aide program.





ZOO TRAILS

TRAIL TOTEM
OUTISTED WALK

CROWNED CRANE TRAIL
ZEBRA TRAIL

ELEPHANT TRAIL

POLAR BEAR TRAIL

ICE CREAM
SOFT DRINKS
SNACKS
RESTAURANT
COFFEE SHOP

SERVICES

TELEPHONE
RESTROOMS
HANDICAPPED
DRINKING FOUNTAIN

INFORMATION

FIRE STATION

POLICE

TRACKLESS TRAIN